

What is claimed is:

1. An information processing method, comprising steps of:
receiving first data and a first digital signature for at least
5 said first data from a first computer;
performing format conversion corresponding to a destination
of said first data, for said first data received in said receiving
step to generate second data; and
sending at least said second data generated in said step of
10 performing format conversion, a format reverse-conversion program
for performing reverse conversion of the format conversion, and said
first digital signature to a second computer associated with said
destination.
- 15 2. The information processing method as set forth in claim 1,
further comprising a step of generating a second digital signature
for at least said second data generated in said step of performing
format conversion, said format reverse-conversion program, and said
first digital signature, wherein said second digital signature is
20 sent to said second computer in said sending step.
3. The information processing method as set forth in claim 1,
wherein a third digital signature for at least said format
reverse-conversion program is received in said receiving step.
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4. The information processing method as set forth in claim 3,
further comprising a step of generating a fourth digital signature
for said second data generated in said step of performing format
conversion, said format reverse-conversion program, said third
30 digital signature, and said first digital signature, wherein said
third digital signature and said fourth digital signature are sent
to said second computer in said sending step.

5. The information processing method as set forth in claim 3, further comprising the steps of:

receiving a request for sending a format reverse-conversion
5 program from said first computer, said request including designation of a destination; and

extracting a format reverse-conversion program corresponding to said destination from a format reverse-conversion program storage, and sending the extracted format reverse-conversion program to said
10 first computer.

6. The information processing method as set forth in claim 1, wherein said format reverse-conversion program and a third digital signature for said format reverse-conversion program are received in
15 said receiving step.

7. An information processing method, comprising the steps of:
receiving first data and a first digital signature for at least said first data from a first computer;

20 performing format conversion corresponding to a destination of said first data, for said first data received in said receiving step to generate a second data; and

sending at least said second data generated in said step of performing format conversion, identification information for
25 identifying a format reverse-conversion program for performing reverse conversion of the format conversion, and said first digital signature to a second computer associated with said destination.

8. The information processing method as set forth in claim 7,
30 further comprising a step of generating a second digital signature for at least said second data generated in said step of performing format conversion and said first digital signature, wherein said

second digital signature is sent to said second computer in said sending step.

9. The information processing method as set forth in claim 8, wherein a second signature is generated for at least said second data generated in said step of performing format conversion, said identification information for identifying a format reverse-conversion program, and said first digital signature in said generating step.

10. An information processing method, comprising the steps of:
sending a computer for performing format conversion of data
a request for sending a format reverse-conversion program for
performing reverse conversion of said format conversion, said request
including designation of a destination of data;

if said format reverse-conversion program is received from
said computer for performing format conversion of data, generating
a digital signature for at least said format reverse-conversion
program; and

sending at least the generated digital signature, said data,
and said digital signature for said data to said computer for
performing format conversion of data.

11. The information processing method as set forth in claim 10, wherein the generated digital signature, said data, said digital signature for said data, and said format reverse-conversion program are sent to said computer for performing format conversion of data in said second sending step.

12. An information processing method, comprising the steps of:
sending a computer for performing format conversion of data
a request for sending a format reverse-conversion program for

performing reverse conversion of said format conversion, said request including designation of a destination of data;

if said format reverse-conversion program is received from said computer for performing format conversion of data, generating
5 a digital signature for at least said format reverse-conversion program and said data; and

sending at least the generated digital signature and said data to said computer for performing format conversion of data.

10 13. An information processing method, comprising the steps of:
receiving data for which format conversion has been performed according to a destination of said data, a digital signature for at least said data before said format conversion, and a format reverse-conversion program for performing reverse conversion of said
15 format conversion;

performing the reverse conversion for said data for which format conversion has been performed, by the received format reverse-conversion program, to generate reversely converted data;

calculating a first hash value from at least said reversely
20 converted data;

restoring a second hash value from the received digital signature; and

comparing the calculated first hash value with the restored second hash value to determine whether there is no alteration.

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14. The information processing method as set forth in claim 13, wherein a digital signature for said data for which format conversion has been performed, said digital signature for at least said data before said format conversion, and said format reverse-conversion
30 program is further received in said receiving step.

15. The information processing method as set forth in claim 13,

wherein a second signature for said format reverse-conversion program is received in the receiving step,

and further comprising the steps of:

calculating a third hash value from said format
5 reverse-conversion program;

restoring a fourth hash value from said second digital signature; and

comparing the calculated third hash value with the restored fourth hash value to determine whether there is no alteration.

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16. The information processing method as set forth in claim 15, wherein a digital signature for said data for which format conversion has been performed, said digital signature for at least said data before said format conversion, said format reverse-conversion
15 program, and said second digital signature for said format reverse-conversion program is further received in said receiving step.

17. An information processing method, comprising the steps of:
20 receiving data for which format conversion has been performed according to a destination of said data, a digital signature for at least said data before said format conversion, and identification information for identifying a format reverse-conversion program for performing reverse conversion of said format conversion;

25 extracting said format reverse-conversion program from a storage by using the received identification information for identifying said format reverse-conversion program;

performing the reverse conversion for said data for which format conversion has been performed, by using the extracted format
30 conversion program, to generate reversely converted data;

calculating a first hash value from at least said reversely converted data;

restoring a second hash value from the received digital signature; and

comparing the calculated first hash value with the restored second hash value to determine whether there is no alteration.

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18. The information processing method as set forth in claim 17, wherein a digital signature for said data for which format conversion has been performed, said digital signature for at least said data before said format conversion, said identification information for
10 identifying said format reverse-conversion program, and a second digital signature for said format reverse-conversion program is further received in said receiving step.

19. A program embodied on a medium for causing a computer to perform
15 an information processing, said program comprising steps of:

receiving first data and a first digital signature for at least said first data from a first computer;

performing format conversion corresponding to a destination of said first data, for said first data received in said receiving
20 step to generate second data; and

sending at least said second data generated in said step of performing format conversion, a format reverse-conversion program for performing reverse conversion of the format conversion, and said first digital signature to a second computer associated with said
25 destination.

20. The program as set forth in claim 19, further comprising a step of generating a second digital signature for at least said second data generated in said step of performing format conversion, said format
30 reverse-conversion program, and said first digital signature, wherein said second digital signature is sent to said second computer in said sending step.

21. The program as set forth in claim 19, wherein a third digital signature for at least said format reverse-conversion program is received in said receiving step.

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22. The program as set forth in claim 2, further comprising a step of generating a fourth digital signature for said second data generated in said step of performing format conversion, said format reverse-conversion program, said third digital signature, and said first digital signature, wherein said third digital signature and said fourth digital signature are sent to said second computer in said sending step.

23. The program as set forth in claim 21, further comprising the steps of:

15 receiving a request for sending a format reverse-conversion program from said first computer, said request including designation of a destination; and

20 extracting a format reverse-conversion program corresponding to said destination from a format reverse-conversion program storage, and sending the extracted format reverse-conversion program to said first computer.

24. The program as set forth in claim 19, wherein said format reverse-conversion program and a third digital signature for said format reverse-conversion program are received in said receiving step.

25. A program embodied on a medium for causing a computer to perform an information processing, said program comprising steps of

30 receiving first data and a first digital signature for at least said first data from a first computer;

performing format conversion corresponding to a destination of said first data, for said first data received in said receiving step to generate a second data; and

5 sending at least said second data generated in said step of performing format conversion, identification information for identifying a format reverse-conversion program for performing reverse conversion of the format conversion, and said first digital signature to a second computer associated with said destination.

10 26. The program as set forth in claim 25, further comprising a step of generating a second digital signature for at least said second data generated in said step of performing format conversion and said first digital signature, wherein said second digital signature is sent to said second computer in said sending step.

15 27. The program as set forth in claim 26, wherein a second signature is generated for at least said second data generated in said step of performing format conversion, said identification information for identifying a format reverse-conversion program, and said first
20 digital signature in said generating step.

28. A program embodied on a medium for causing a computer to perform an information processing, said program comprising steps of:

25 sending a computer for performing format conversion of data a request for sending a format reverse-conversion program for performing reverse conversion of said format conversion, said request including designation of a destination of data;

30 if said format reverse-conversion program is received from said computer for performing format conversion of data, generating a digital signature for at least said format reverse-conversion program; and

sending at least the generated digital signature, said data,

and said digital signature for said data to said computer for performing format conversion of data.

29. The program as set forth in claim 28, wherein the generated
5 digital signature, said data, said digital signature for said data, and said format reverse-conversion program are sent to said computer for performing format conversion of data in said second sending step.

30. A program embodied on a medium for causing a computer to perform
10 an information processing, said program comprising steps of:

 sending a computer for performing format conversion of data
a request for sending a format reverse-conversion program for performing reverse conversion of said format conversion, said request including designation of a destination of data;

15 if said format reverse-conversion program is received from said computer for performing format conversion of data, generating a digital signature for at least said format reverse-conversion program and said data; and

 sending at least the generated digital signature and said data
20 to said computer for performing format conversion of data.

31. A program embodied on a medium for causing a computer to perform an information processing, said program comprising steps of:

 receiving data for which format conversion has been performed
25 according to a destination of said data, a digital signature for at least said data before said format conversion, and a format reverse-conversion program for performing reverse conversion of said format conversion;

 performing the reverse conversion for said data for which
30 format conversion has been performed, by the received format reverse-conversion program, to generate reversely converted data;

 calculating a first hash value from at least said reversely

converted data;

restoring a second hash value from the received digital signature; and

5 comparing the calculated first hash value with the restored second hash value to determine whether there is no alteration.

32. The program as set forth in claim 31, wherein a digital signature for said data for which format conversion has been performed, said digital signature for at least said data before said format
10 conversion, and said format reverse-conversion program is further received in said receiving step.

33. The program as set forth in claim 31, wherein a second signature for said format reverse-conversion program is received in the
15 receiving step,

and further comprising the steps of:

calculating a third hash value from said format reverse-conversion program;

restoring a fourth hash value from said second digital
20 signature; and

comparing the calculated third hash value with the restored fourth hash value to determine whether there is no alteration.

34. The program as set forth in claim 33, wherein a digital signature for said data for which format conversion has been performed,
25 said digital signature for at least said data before said format conversion, said format reverse-conversion program, and said second digital signature for said format reverse-conversion program is further received in said receiving step.

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35. A program embodied on a medium for causing a computer to perform an information processing, said program comprising steps of:

receiving data for which format conversion has been performed according to a destination of said data, a digital signature for at least said data before said format conversion, and identification information for identifying a format reverse-conversion program for
5 performing reverse conversion of said format conversion;

extracting said format reverse-conversion program from a storage by using the received identification information for identifying said format reverse-conversion program;

performing the reverse conversion for said data for which
10 format conversion has been performed, by using the extracted format conversion program, to generate reversely converted data;

calculating a first hash value from at least said reversely converted data;

restoring a second hash value from the received digital
15 signature; and

comparing the calculated first hash value with the restored second hash value to determine whether there is no alteration.

36. The program as set forth in claim 35, wherein a digital
20 signature for said data for which format conversion has been performed, said digital signature for at least said data before said format conversion, said identification information for identifying said format reverse-conversion program, and a second digital signature for said format reverse-conversion program is further received in said
25 receiving step.

37. A computer system, comprising:

a receiver, which receives first data and a first digital signature for at least said first data from a first computer;

30 a format converter, which performs format conversion corresponding to a destination of said first data, for said first data received by said receiver to generate second data; and

a sender, which sends at least said second data generated by said format converter, a format reverse-conversion program for performing reverse conversion of the format conversion, and said first digital signature to a second computer associated with said destination.

38. The computer system as set forth in claim 37, further comprising a generator, which generates a second digital signature for at least said second data generated by said format converter, said format reverse-conversion program, and said first digital signature, wherein said second digital signature is sent to said second computer by said sender.

39. The computer system as set forth in claim 37, wherein a third digital signature for at least said format reverse-conversion program is received by said receiver.

40. The computer system as set forth in claim 39, further comprising a second generator, which generates a fourth digital signature for said second data generated by said format converter, said format reverse-conversion program, said third digital signature, and said first digital signature, wherein said third digital signature and said fourth digital signature are sent to said second computer by said sender.

41. The computer system as set forth in claim 39, further comprising:

a second receiver, which receives a request for sending a format reverse-conversion program from said first computer, said request including designation of a destination; and

an extractor, which extracts a format reverse-conversion program corresponding to said destination from a format

reverse-conversion program storage, and sends the extracted format reverse-conversion program to said first computer.

42. The computer system as set forth in claim 37, wherein said
5 format reverse-conversion program and a third digital signature for said format reverse-conversion program are received by said receiver.

43. A computer system, comprising:
a receiver, which receives first data and a first digital
10 signature for at least said first data from a first computer;
a format converter, which performs format conversion corresponding to a destination of said first data, for said first data received by said receiver to generate a second data; and
a sender, which sends at least said second data generated by
15 said format converter, identification information for identifying a format reverse-conversion program for performing reverse conversion of the format conversion, and said first digital signature to a second computer associated with said destination.

20 44. The computer system as set forth in claim 43, further comprising a generator, which generates a second digital signature for at least said second data generated by said format converter and said first digital signature, wherein said second digital signature is sent to said second computer by said sender.

25 45. The computer system as set forth in claim 44, wherein a second signature is generated for at least said second data generated by said format converter, said identification information for identifying a format reverse-conversion program, and said first digital signature
30 by said generator.

46. A computer system, comprising:

a sender, which sends a computer for performing format conversion of data a request for sending a format reverse-conversion program for performing reverse conversion of said format conversion, said request including designation of a destination of data;

5 a generator, which generates, if said format reverse-conversion program is received from said computer for performing format conversion of data, a digital signature for at least said format reverse-conversion program; and

10 a second sender, which sends at least the generated digital signature, said data, and said digital signature for said data to said computer for performing format conversion of data.

47. The computer system as set forth in claim 46, wherein the generated digital signature, said data, said digital signature for said data, and said format reverse-conversion program are sent to said computer for performing format conversion of data by said second sender.

48. A computer system, comprising:

20 a sender, which sends a computer for performing format conversion of data a request for sending a format reverse-conversion program for performing reverse conversion of said format conversion, said request including designation of a destination of data;

25 a generator, which generates, if said format reverse-conversion program is received from said computer for performing format conversion of data, a digital signature for at least said format reverse-conversion program and said data; and

30 a second sender, which sends at least the generated digital signature and said data to said computer for performing format conversion of data.

49. A computer system, comprising:

a receiver, which receives data for which format conversion has been performed according to a destination of said data, a digital signature for at least said data before said format conversion, and a format reverse-conversion program for performing reverse
5 conversion of said format conversion;

a reverse converter, which performs the reverse conversion for said data for which format conversion has been performed, by the received format reverse-conversion program, to generate reversely converted data;

10 a calculator, which calculates a first hash value from at least said reversely converted data;

a restorer, which restores a second hash value from the received digital signature; and

a comparator, which compares the calculated first hash value
15 with the restored second hash value to determine whether there is no alteration.

50. The computer system as set forth in claim 49, wherein a digital signature for said data for which format conversion has been performed,
20 said digital signature for at least said data before said format conversion, and said format reverse-conversion program is further received by said receiver.

51. The computer system as set forth in claim 49, wherein a second
25 signature for said format reverse-conversion program is received by said receiver,

and further comprising:

a second calculator, which calculates a third hash value from said format reverse-conversion program;

30 a second restorer, which restores a fourth hash value from said second digital signature; and

a second comparator, which compares the calculated third hash

value with the restored fourth hash value to determine whether there is no alteration.

52. The computer system as set forth in claim 51, wherein a digital
5 signature for said data for which format conversion has been performed,
said digital signature for at least said data before said format
conversion, said format reverse-conversion program, and said second
digital signature for said format reverse-conversion program is
further received by said receiver.

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53. A computer system, comprising:

a receiver, which receives data for which format conversion
has been performed according to a destination of said data, a digital
signature for at least said data before said format conversion, and
15 identification information for identifying a format
reverse-conversion program for performing reverse conversion of said
format conversion;

an extractor, which extracts said format reverse-conversion
program from a storage by using the received identification
20 information for identifying said format reverse-conversion program;

a reverse converter, which performs the reverse conversion for
said data for which format conversion has been performed, by using
the extracted format conversion program, to generate reversely
converted data;

25 a calculator, which calculates a first hash value from at least
said reversely converted data;

a restorer, which restores a second hash value from the received
digital signature; and

a comparator, which compares the calculated first hash value
30 with the restored second hash value to determine whether there is no
alteration.

54. The computer system as set forth in claim 53, wherein a digital signature for said data for which format conversion has been performed, said digital signature for at least said data before said format conversion, said identification information for identifying said
5 format reverse-conversion program, and a second digital signature for said format reverse-conversion program is further received by said receiver.